

Name:

Date:

/50

%

PART A In the space on the left, write the letter of the term or phrase which **best** completes the statement or answers the question (1 mark each).

- ____ 1. Which of the following is a good conductor?
a. Air
b. Argon
c. Metal
d. Plastic
- ____ 2. Which of the following would have the highest albedo?
a. Water
b. Forest
c. Desert
d. Soil
- ____ 3. The movement of liquid in a lava lamp occurs by ...
a. Conduction
b. Convection
c. Electromagnetic radiation
d. Infrared radiation
- ____ 4. The atmospheric layer closest to the Earth's surface is the ...
a. Troposphere
b. Thermosphere
c. Stratosphere
d. Exosphere
- ____ 5. The _____ is warm air that rises on land and is replaced by cool air drawn in over the water.
a. The Coriolis affect
b. An land breeze
c. A jet stream
d. A sea breeze
- ____ 6. In which substance would convection occur?
a. Wood
b. Air
c. Metal
d. Pebbles

- ___ 7. Your hands become warm when you hold a cup of tea because of ...
a. Conduction
b. Convection
c. Radiation
d. Humidity
- ___ 8. The amount of solar radiation that is reflected by a surface is ...
a. The radiation budget
b. Insolation
c. Albedo
d. None of the above
- ___ 9. Which of the following effects atmospheric pressure?
a. Altitude
b. Humidity
c. Temperature
d. All of the above
- ___ 10. Which of the following is not one of Earth's three major wind systems?
a. Tradewinds
b. Prevailing westerlies
c. Polar easterlies
d. Tropical winds

PART B In the space provided mark each of the following as true or false. (1 mark each)

- ___ 1. A front is the boundary between two air masses.
- ___ 2. When warm air over water draws cool air from over the land, land breezes occur.
- ___ 3. Warm air is heavier than cold air.
- ___ 4. 0°C is 273°K .
- ___ 5. Absorbed radiation is almost always converted to thermal energy.
- ___ 6. As temperature increases, particles move slower.
- ___ 7. Low-pressure cells mean air is rising.
- ___ 8. When a warm air mass approaches a cold air mass, the cold air rises.
- ___ 9. The North Pole
- ___ 10. Jet streams occur in the lithosphere.

PART C In the space provided, match each term or phrase with the best definition. (1 mark each)

- | | |
|------------------------|---|
| ___ 1. Troposphere | A. A change in direction of moving air due to the Earth's rotation. |
| ___ 2. Conduction | B. The solid, outer layer of the Earth. |
| ___ 3. Coriolis effect | C. Materials that have limited ability to transfer thermal energy. |
| ___ 4. Hydrosphere | D. The relatively thin layer of gases that surround the Earth. |
| ___ 5. Humidity | E. Occurs when water vapour condenses and releases thermal energy. |
| ___ 6. Lithosphere | F. The amount of radiation reflected by a surface. |
| ___ 7. Albedo | G. The atmospheric layer that merges with outer space. |
| ___ 8. Insulators | H. Heat transfer between substances that are in direct contact. |
| ___ 9. Convection | I. Describes how much water vapor is in the air. |
| ___ 10. Atmosphere | J. Includes all water in, on, or near the Earth's surface. |

PART D Each of the following questions requires a short answer.

1. You are boiling some water in a pot on a stove, as it heats up the air around the pot feels hot. Explain how all three forms of heat transfer are involved in this scenario. (3 marks)

2. Explain how land and sea breezes occur and when they usually occur. (4 marks)

3. Explain how each of the following affects atmospheric pressure: (1 mark each)
- a. Altitude
 - b. Temperature
 - c. Humidity
4. Why does a pot of melted cheese cool faster than a pot of water at the same temperature? (2 marks)
5. Explain how the albedos of snow and clouds influence temperature. (4 marks)
6. Describe the temperature and density of air in a high pressure cell and a low pressure cell. (4 marks)